The Inadequacy of the Copyright System in Addressing Digitalization and Internet Challenges

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ABSTRACT

At the international as well as the local level, several different legal frameworks have been developed to affirm and protect fundamental rights. Copyright law has developed in reaction to technological advancements; since its inception. The most recent breakthroughs in digital technology; such as digital communications networks like the Internet and personal computers; are generating headlines throughout the world. This study attempts to add to the current discussion on copyright law; change by doing extensive research. This research seeks to provide light on the confluence between existing intellectual property laws; and the growing digital ecosystem. Overall, the stud aims to explore all the related issues and laws associated with intellectual property in the Pakistan which is relatively in the early phases.

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1. Introduction

Copyright is a form of intellectual property that is granted to authors of creative; and literary works upon the production of those works. There are a variety of legal systems; that have been established in order to recognize and protect these rights; on both the international and regional degrees. Berne Convention, the World Intellectual Property Organization Copyright Treaty (WCT); and the Copyright Act; are all examples of these types of systems. Since the beginning of its existence, copyright law; has constantly developed in response to advances in technology. At this very moment, the most current developments in digital technology and digital communications networks, such as the Internet and personal computers, are making headlines all over the world (Bowker, 2020). These technologies, along with other advancements, have the potential to either help or hurt various parties involved in the use of creative works such as books, music, films, and web pages for the purpose of making a profit. While this is true, it is important to note that they are only a single step in the long and winding path of adaptation that copyright law has travelled throughout existence. As pointed out by Boyle (2001), the challenge of achieving a suitable equilibrium between these aims in light of the most recent improvements is crucial and might be regarded as original or unique.

The boundaries between the digital and physical worlds are becoming increasingly distorted, which has led to the emergence of concerns around digital piracy, fair use in a digital setting, and the constantly shifting panorama of user-generated material. For the purpose of gaining a deeper understanding of the issues that are brought about by globalization and the complex web of jurisdictional concerns, it will be feasible to conduct
research on international viewpoints (Disemadi et al., 2023). Furthermore, as new technologies such as artificial intelligence and blockchain continue to disrupt the creative ecosystem, it becomes increasingly apparent that there is a need for copyright solutions that are both flexible and forward-thinking. Through the undertaking of a comprehensive research; the purpose of this research is to make a contribution to the ongoing discussion; over the modification of laws pertaining to copyright. The purpose of this research is to achieve the objective of providing insights; into the complex junction between traditional intellectual property regimes; and the rapidly developing digital frontier (Gomulkiewicz, 2018).

2. Literature Review

Many different types of intellectual property rights that are available to authors of literary and creative works at the moment of production. It is a legal entitlement to possess copyright. According to the Berne Convention, this right is granted regardless of whether or not the work has been published, provided that it satisfies the fundamental requirements of originality, fixation, and reciprocity. As a result of the development of modern technology in the areas of creating, transmitting, and maintaining digital data, such as content that is protected by intellectual property rights, digital rights holders and writers are presented with different opportunities and challenges. According to Hirtle (2019), copyright should serve as a source of motivation for writers and holders of copyright to create new works and make use of cutting-edge technology in order to share them with users and consumers in the digital era. Professionals in the field of copyright face this challenge. There is currently a broad presence of individuals who are looking to infringe on intellectual property rights through the unlawful use of technology. This is the case despite the fact that competition poses a serious threat. It is essential to steer clear of antiquated copyright laws in order to avoid them from limiting the practical applications of works when technological advancements are made.

By the provisions of Section 1(2) of the Copyright Act, in order to prove ownership of a work, an author is required to spend sufficient time, knowledge, and judgement. Additionally, it is necessary to identify these works in a way that is unmistakable and unambiguous. As a consequence of employing these criteria, the requirement for individuality is brought to light. The protection of digital creative works or ideas is contingent upon the fact that they are visible, reproducible, or distributable via the use of technical means. I am of the opinion that this clause offers a solution to the question of whether or not the Copyright Act recognises digital technology. According to Leaffer (2019), the intrinsic qualities of digital technology make it easier for unauthorised individuals to reproduce, edit, and distribute protected content inside the digital world. This is a serious problem among digital technology users.

A substantial amount of writing has been created as a result of the increasing usage of the internet and the digitalization of information, which has prompted an investigation into the difficulties that are encountered by traditional copyright regimes. Academics have brought attention to the growing cause for worry regarding digital piracy as a serious issue, highlighting the ease with which content that is protected by intellectual property rights may be unlawfully obtained and distributed online. As a result, there has been debate over the efficiency of traditional copyright enforcement techniques; in light of the ever-changing digital environment. Furthermore, in the digital era, the concept of fair use; which is a key component of copyright law, has been criticized. Academics have claimed that the uncertainty surrounding fair usage; in the digital era has made it difficult to fully define and enforce this idea (Martinez & Terras, 2019). The transformational nature of digital material creation; which frequently blurs the boundaries between original work and derivative outputs; adds a level of complication to the implementation of fair use principles. Furthermore, the study underlines the rise of user-generated content; as a significant challenge to copyright regimes. This problem has been identified; as a serious challenge. Platforms featuring user-generated content provide a wide range of issues; linked with copyright infringement. As a result, a careful balance must be struck between protecting content creators' rights; and fostering innovation on electronic platforms (Nuriddin, 2023).
Because of the globalization of information and communication technologies; there are now jurisdictional concerns in the enforcement of copyright rules on a global scale. Ginsburg & Gorman, (2012) and other authors have authored works that delve into the complexities of cross-border implications; and study the difficulties of enforcing copyright regulations in a more international digital world. A variety of international copyright treaties; including those established by the World Intellectual Property Organization (WIPO); are being examined to determine their effectiveness in bringing copyright laws from various nations; into agreement with one another. According to the research, there is a need for countries to work together to overcome the problems; caused by the global nature of digital content transmission. Recent academic study has begun to look at the impact that emerging technologies; will have on copyright issues. This study is looking to the future. Artificial intelligence (AI) and machine learning; in particular, raise concerns about the implications of copyright for computer-generated content. Researchers are investigating the potential applications of blockchain technology in the administration of copyrights; and the development of decentralized platforms for content distribution. Attention has also been drawn; to the ever-changing world of blockchain technology. According to the findings, copyright regimes must develop in order to deal with the complexities; that new technologies provide. This emphasizes the importance of prompt legal; and legislative solutions (Kraut, 2016).

3. Methodology

A qualitative research methodology is used to assess the weaknesses of the current copyright system in terms of addressing the problems caused by digitalization and the internet. This qualitative method is intended to give a more in-depth knowledge of the complicated difficulties linked; with digital copyright concerns. It emphasizes the qualitative depth and contextual insights derived from the lived experiences; and expert opinions of individuals who are directly involved in or influenced; by the changing copyright environment. Ethical considerations—such as participant confidentiality and voluntarily informed consent; must be strictly followed throughout the study procedure.

4. Discussion

4.1 Historical Background of Copyright Protection

The Statute of Anne is an important milestone in the legal creation of copyright, however copyright existed prior to 1710 and has a far longer history. King Diarmund of Ireland issued an edict in the sixth century to settle a dispute between Finnanin and Columcille (Leaffer, 2019). This pronouncement is said to be the first time copyright was presented to the world. The invention of printing technology in the 15th century brought about substantial changes, spurring the formation of copyright laws as a direct response to these advancements. This technical innovation caused a revolution in the ways of duplicating literary works throughout the historical time in issue. One of the most significant ramifications was that the machine could make mass copies or publications in a short period of time, as opposed to the time-consuming manual manner of production that was done by hand. As a consequence of this technology, which allowed for the quick and mechanical replication of the texts, the thoughts contained within the writings were made broadly available to the general public for the first time (Disemadi et al., 2023). During the development of the The Queen of England used her royal prerogative by granting a charter to a stationers' firm in London. This marked the start of the printing press called the Gutenberg. Due to the Stationers' Company being a craft guild with supervisory duties over its members, a licence was necessary before a book could be published with their support. This was the prevailing scenario due to the continued validity of the licence. Only firm members were licenced to distribute and produce books. Furthermore, the corporation was authorised to look for and remove any publications that were created or printed in breach of the law (Psychogiopoulou, 2022).

Printing machine technology was created to address issues related to copyright protection and piracy. It was created to address the issue of slow hand duplication of books using a printing machine. As a result, the publishers made a substantial effort to fix the matter through legislative action. In 1709, legislation was passed to address the prevalent issue of piracy and exploitation. This legislation provided a resolution to the problem. The Copyright Act of 1709, often known as the Statute of Anne, is widely regarded as the
world’s first copyright law as it was established during Queen Anne's reign. In 1710, the first copyright laws was enacted in England, which is largely recognised as the initial copyright law. The concept that a creator of a work owns the copyright to that work is attributed to the Act, which is credited with introducing the concept. The second reason is that it established the notion of copyright protection being enforced for a certain period of time. Beginning with the initial publishing of the book, authors were awarded the exclusive right and ability to produce books for a period of fourteen years. If the author was still alive at the end of the first period of protection, he or she was entitled for a further fourteen years of infringement protection. The content will thereafter be regarded to be in the public domain. When it comes to works that were already in print before to the Act’s passing, the duration of protection was increased to 21 years with no further time added (Ricketson & Ginsburg, 2022).

Copyright was awarded to authors for the very first time by the Act, rather than to publishers. This was in contrast to the Press Licencing Act that was passed in 1662. In addition, the Act contained a number of other key requirements, such as the requirement that all works protected by copyright must be registered at Stationers' Hall and stored in certain libraries. A key shortcoming of this legislation, on the other hand, was that it did not recognise or protect works that had not yet been published. With the passage of the Copyright Act in 1790, the Statute of Anne had a significant influence on the development of copyright laws in other nations, most notably the United States of America. This is a consideration that ought to be taken into account. Before the year 1886, the legislation governing copyright were still in the process of being developed on a global basis. Copyright was enhanced when the Berne Convention for the Protection of Literary and Artistic Works was established in 1886. This convention was established in Switzerland. Through this agreement, worldwide principles for copyright protection were established, and governments were given the opportunity to mutually acknowledge copyright protection. The need that works protected by intellectual property rights be separately registered in each country is also removed as a result of the Convention. The Berne Convention has been accepted and implemented by all member states, as well as certain non-member nations. More than 140 of the approximately 190 sovereign governments throughout the world have done so. The Berne Treaty continues to serve as the cornerstone of copyright legislation across the world, despite the fact that there have been some minor modifications. According to the observations of academics, the abolition of the necessity for registration and the extending of copyright protection to works that have not yet been published were two key outcomes that resulted from the adoption of the Berne Convention legislation. An individual or their organisation is the owner of the copyright of any work that they create after it has been documented or kept in a form that is recognised or communicable, such as through writing, drawing, cinematography, or any other methods (Taylor, 2021). This is the case according to the states that contracted with the United States.

The arrival of printing technology in the 15th century brought about a lot of changes, and one of the key responses to these advancements was the establishment of copyright. This technical innovation caused a revolution in the ways of duplicating literary works throughout the historical time in issue. One of the most significant ramifications was that the machine could make mass copies or publications in a short period of time, as opposed to the time-consuming manual manner of production (Zakir et al., 2023).

4.2 Characteristics of Digital Age

The term "Digital Age" refers to a historical period in the twenty-first century that is characterized by a rapid change from conventional industry, which was brought about by the Industrial Revolution through the process of industrialization, to an economy that is dependent on information technology. This term refers to the period of time when personal computers and other technologies were brought to the market in order to provide customers with the opportunity to communicate information in a straightforward and speedy manner. When compared to other periods in human history, the Digital Age is distinguished by the unprecedented and pervasive dissemination of information over the world (Ginsburg & Gorman, 2012).
4.3 Justification of Copyright Protection in Digital Age

When it comes to preserving and disseminating content, the digitalization of literary and artistic works has become the newly accepted standard. There are several instances in which the question of whether or not an author ought to be granted copyright on the work that he makes is brought up. The arguments that are presented are often presented through a number of different theories that are in competition with one another.

4.3.1 Economic Theory

In the United States of America, which is a capitalist society, economic theory, which is also commonly referred to as utilitarian theory, serves as the basis for economic policy. The growth of contemporary technology, according to those who hold this perspective, has resulted in an increasing demand for the protection of copyright. This is due to the fact that it has decreased the amount of time that is required to generate duplicates, while simultaneously enabling that more perfect copies to be created in the lowest period of time that is reasonably conceivable. To add insult to injury, the proponent of this approach views copyright regulations as an attempt to promote economic efficiency by striking a balance between the consequences of higher protection and the objective of promoting future creation (Barazza, 2014). As a consequence of this, the idea provides a justification for the holders of such rights to be awarded exclusive rights for a limited amount of time. For the duration of this time period, it is strictly forbidden for any other individuals to make use of or exploit the works for commercial reasons. The holders of such rights are able to take advantage of market possibilities to produce, sell, import, license, or otherwise exploit their rights while the exclusivity period is in effect. This enables them to recuperate the capacity investment that they made (Leaffer, 2019).

4.3.2 Labor Theory

In the same way as every physical item that a person has labored to make out of "the common" belongs to that person, the notion was proposed by the English thinker John Locke. Locke's idea was presented in the same meaning. The intellects of a person are considered to be the property of that person, according to Locke. Furthermore, given the possibility of suffering injuries (as is the case with movie stars who sustain injuries on set) or losing one's life during the process, as well as the fact that funds are spent on the entire creative process, it is critical that the author or creator be allowed to receive their dividends if creativity is to be maintained. The divine mandate that was given to mankind ensured that man would consume the results of his labor, and this is in accordance with that mandate (Hirtle, 2019).

4.3.3 Reward or Incentive Theory

The basic premise that underpins this idea is that society has a moral duty to recompense and reward those who are responsible for the creation of intellectual work for the efforts that they have put forth. A certain level of protection from their society is something that inventors and innovators anticipate receiving, given the huge benefits they provide to society as a whole. It is done in order to enhance the creative process and to motivate other people who might be interested in following in their footsteps and engaging in activities that are comparable to those that they have done. On the other hand, nobody wants to take part in an activity that will result in very little or nothing at the end of the day. Particularly in situations where a significant amount of time and money has been invested in the undertaking. As long as they are managed appropriately, the innovations that result from intellectual endeavors have the potential to make a contribution to the socioeconomic development of the nation. One way in which this advantage might be improved is through the implementation of suitable regulations that control the connection that exists between the author and society (Zakir et al., 2023).

4.4 Effect of Digital Technology on Copyright Protection

Digital technologies have played a significant role in the transformation of the world; however, like a sword with two edges, it comes at a cost for owners of intellectual property.
The owners of creative works that are created in the digital environment are in grave danger of having their works stolen or stolen into the hands of unauthorized parties. A number of authors have made the observation that the beginning of the increasing impact of technology on the development of copyright can be traced back to the invention of the printing press as well as the establishment of recording and broadcasting technologies. In spite of this, it has been shown that non-poses the biggest threat to the protection of copyright in the contemporary digital era. This is due to the fact that users are responsible for copyright infringement on a massive scale. It is because of the widespread adoption of digital technology in this day and age that this is the case. In contrast, the researchers highlighted four characteristics of digital technologies that have had an impact on the protection of intellectual property rights. According to them, another impact that digital technology has had on copyright is the ease with which it can be reproduced, the ease with which media contents can be disseminated or shared, the increased storage capacity of digital devices, and the affordable process of duplicating work that is protected by intellectual property rights. All of these factors have contributed to the proliferation of digital technology (Bently et al., 2022).

When a piece of work is created in digital format, it may be copied quickly, inexpensively, or even for free, and the quality of the work will not be compromised in any way. This is distinguishable from earlier forms. In turn, each copy may be copied several times without the quality deteriorating; hence, a single digital copy of a work can satisfy the requirements of millions of individuals. Furthermore, the speed with which information can be carried across digital networks is one of the aspects of digital technology that stands out the most to the average person. Therefore, a single person is able to disseminate information rapidly and in the shortest amount of time feasible, regardless of whether or not the information is accurate. This is the case; regardless of whether or not the information is accurate. This viral impact; in conjunction with the simplicity with which a document or piece of information can be reproduced: suggests that it is feasible to make many copies of digital material with a single copy; which can then be transmitted to a variety of individuals all over the world; in a matter of minutes due to the fact that it can be replicated (Kozhemiakin, 2019).

Digital storage systems; have the capacity to store a substantial quantity of data in a very little amount of space; which is yet another astonishing feature of digital technology. It is possible to reduce a huge document to a few kilobytes; as a consequence of this. As each year goes by, digital storage devices continue to get more compact; which means that individuals will be able to store enormous amounts of data; in a very little amount of space. The entire library collection may be stored in a single folder; on a personal computer; or it could be stored in many folders at the same time. An iPod, a music file called an MP3, satellite networks, and a document in PDF format are all examples of digitalized creative work that are often seen. This has made it possible to compress and repackage music without compromising the sound quality of the recorded music. As a direct consequence of this, the music business has undergone massive transformations. Once more, it is not uncommon to come across individuals who make use of and transfer copyrighted stuff with other individuals without showing any regard or limits. They think that the work that can be discovered on the internet is owned by no one and is available for free. Young people, particularly those who use the internet the most often, are susceptible to this misconception, and as a consequence, they engage in such unethical acts of infringement. This misconception is widespread around the globe (Barazza, 2014).

4.5 Challenges of Copyright Protection

One of the most significant effects that digital technology has had on the respect for intellectual property rights is the ease with which copyrighted works may be downloaded and distributed utilizing digital devices and an internet connection that is operational. Using a basic personal computer that is outfitted with the appropriate software package, it is possible to duplicate a digital work that is indistinguishable from the original and possesses the same features as the original. This seeming problem is made much more severe by the fact that the internet has made it possible for a significant number of copyright violations to take place on a scale that has never been seen before. This is due to the fact that the internet makes it possible for anyone to quickly transmit anything that is protected by
copyright, regardless of any particular limits. However, a paradoxical argument in defense of such infringement is that it gives the proprietors of creative work with quick recognition through rapid transmission and circulation of their creative work. Despite the fact that the author does not receive any comparable financial benefit as a result of the infringement of their right via the work, the author achieves rapid fame in the shortest period of time (Nuriddin, 2023).

The world of copyright has been driven to face the current conundrum of how to guarantee that writers and rights holders will continue to be inspired to produce new works of art. There are some authors who have been cautious to convert their work into digital format since there is a possibility that those who violate intellectual property rights may take advantage of new digital technologies in order to disseminate and distribute material that is protected by copyright to users and customers. Specifically, this is due to the fact that those who infringe may exploit digital technology to their advantage. In spite of the fact that it is of the utmost importance to concentrate on the damage that piracy does to the owner of the right, it is equally important to investigate the actions of customers who choose to consume pirated goods rather than looking for the original. This is necessary in order to appreciate the rationale for the prevalent practice of piracy. As far as he is concerned, digital piracy is an act of intellectual theft that results in an incalculable loss for the owner of the property. In light of the similarities between shoplifting and piracy, he goes on to assert that a significant number of individuals who engage in piracy might never make an effort to steal a product of comparable value from a store (Bowker, 2020).

4.6 International Context of Copyright Protection in Digital Age

Cyberspace came into being as a direct consequence of the widespread use of digital technology, which in turn led to a significant increase in the number of information sources and the utilisation of those sources. The advent of technology has brought about a problem that, if not addressed promptly, has the potential to cause damage to the economy and culture of the entire globe via acts of piracy and the infringement of intellectual property. If someone were to leave this problem ignored, it may be solved. In 1886, the Berne Convention for the Protection of Literary and Creative Works was established as the first worldwide reaction to protect intellectual property rights in literary and creative works. This convention was established in order to protect these rights. Paris in 1896, Brussels in 1948, Stockholm in 1967, and Paris in 1971 were the locations where amendments were made to the agreement between the parties.

According to Branstetter (2017), just ten of the member nations had signed the agreement at the time of the review and revision. For the purpose of defining copyright protection standards that were less strict than absolute, an agreement was developed. Regarded as the most important aspects of possession, national treatment and the absence of formalities associated to registration are considered to be the most important traits. In accordance with the national treatment principle, a writer from one contracting state is entitled to the same level of protection as authors from another contracting state when they are working in that state. In accordance with the principle of no formality, it is forbidden for contracting states to demand any procedures, such as registration, prior to the provision of protection (Gudisa, 2022).

The Convention does not contain any measures that address the issue of copyright infringement in cyberspace, which is a problematic situation that requires consideration. As a result of the proliferation of the internet, it is now much simpler to unlawfully duplicate and distribute intellectual works such as films, audio recordings, photographs, short stories, news items, and articles without giving credit to the owners or providing them with remuneration. It is possible that this will include the reproduction and distribution of these works in large quantities. It was important to make modifications to the current framework in order to address the issue of intellectual theft. The Berne Convention could not adequately handle the issue of piracy in the information technology industry, which led to challenges in resolving the issue. Both the World Intellectual Property Organisation Copyright Treaty (WCT) and the World Intellectual Property Organisation Performances and Phonograms Treaty (WPPT) were developed with the intention of safeguarding the legal rights of those who generate material and those who write for digital media (Ginsburg, 2020).
4.7 Technological Measurements Against Copyright Violation

Copyright infringement endangers the creative process; as well as the social and economic prosperity of any civilization. This threat has taken on a new dimension; with the introduction of digital technology. As a result, appropriate technical countermeasures must be implemented; to ensure that writers’ rights and interests are protected. The following are various countermeasures that have been suggested to defend the rights; and interests of information technology proprietors (Ginsburg & Gorman, 2012).

4.7.1 The Blockchain Technology

Blockchain technology is a modern digital distributed ledger; or infrastructure that allows users to record transactions; that take place among peers. This ledger is designed to keep track of duplicated works; that have been delivered via computer system. These creations are encoded with digital codes and information; and each one is signed or recognized uniquely. An individual can track the history and verify the provenance of the media piece in issue by employing the data that has been gathered. This preventive feature distinguishes blockchain from other systems; and it has been proven; to be the most effective solution for resolving copyright issues in digital contexts (Qian, 2022).

4.7.2 Digital Watermarks

Digital watermarks are an excellent approach; for securing a copyright holder’s work since they allow the owner to trace down his work; and prevent it from being reproduced. Because it is frequently hard to distinguish between the original copy and the duplicate copy; this is critical when it comes to recognizing illicit copying. Watermarking is a preventive measure that entails engraving the author's signature; or a particular mark onto the author's original work. This is done in such a manner that the potential of illegal copying is eliminated; and the author is identified as the owner of the work; through the use of the specific sign or mark. Watermarking is a viable solution to the problem; of copyright breaches in multimedia information (Dorji, 2022).

5. Conclusion

In today’s world, protecting intellectual property rights is a challenging issue; that requires the government to take a proactive approach. In order to protect copyrights; a legal framework that is active; intentional and suitable is required. This is comparable to what is happening in other nations; where technical countermeasures are also critical. A growing number of individuals are becoming aware of the need of legal frameworks; evolving in tandem with technological advancements. The reliance on international treaties like as the WCT and WPPT; as well as local legislative amendments; underlines the ongoing effort to bridge the gap between traditional copyright standards and the digital reality of today. Despite this, there is still an urgent need for continuing updates and adjustments; to ensure appropriate protection against copyright infringement in the digital era.

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Muhammad Hamza Qamar: Contributed to the conceptualization, research design, literature review, data analysis, and drafting of the manuscript.
Jibran Jamshed: Contributed to the conceptualization, research design, literature review, data analysis, and critical revision of the manuscript for important intellectual content.

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